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Meeting abstract

2054 Prevalence of unsuspected abnormal findings in cardiac magnetic resonance imaging for pulmonary vein mapping

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Background

Cardiac magnetic resonance imaging (cMRI) has been utilized to evaluate the anatomy of the pulmonary veins (PV) for radiofrequency catheter ablation (RFCA) of atrial fibrillation. The purpose of our study was to assess the prevalence of significant findings identified on cMRI examinations ordered to assess PV anatomy.

Methods

We performed a retrospective review of consecutive patients with a diagnosis of atrial fibrillation who were either pre- or post-RFCA and underwent cMRI between December 2005 to September 2007. The prevalence of other significant findings was established by review of electronic medical records.

Results

Data were available from 105 cMRI studies of 61 patients. Of these, 38 patients underwent at least one other follow-up cMRI post-RFCA. Forty-two patients (69%) were male, with a mean age of 57 years. Thirty-seven patients (61%) had unexpected significant findings. These findings and their prevalence are summarized in the table in Figure 1.

Conclusion

As cardiac MRI is increasingly used for PV mapping, various anatomical abnormalities unrelated to atrial fibrillation will be identified. Our study revealed a high prevalence of unsuspected cardiac and vascular findings with potential clinical significance. Interpreters of these studies should be familiar with the spectrum of these abnormalities, and to have a practical approach to the management of these findings.

Table 1. Abnormalities found during cMRI for PV anatomy.

Finding	Number of patients (%)
Decreased left ventricular function	14 (23)
Decreased right ventricular function	10 (16)
Dilated descending thoracic aorta	9 (15)
Dilated left ventricle	9 (15)
Pulmonary vein anatomic abnormality	9 (15)
Accessory right pulmonary vein	8 (13)
Dilated right ventricle	7 (11)
Dilated ascending aorta	4 (6)
Mitral regurgitation	2 (3)
Left ventricular wall motion abnormality	2 (3)
Right ventricular wall motion abnormality	2 (3)
Other	10 (16)

Figure 1
Table of abnormalities found during cMRI for PV anatomy.